

Objected to claim 113 has been amended to be written into independent form and claims 114 and 116 have been amended to depend therefrom.

Examiner Price is thanked of the courtesies extended during the recent interview where the applied prior art was discussed and the proposals to overcome this prior art were also discussed. This amendment comports with the tentative agreement reached at the time of the interview.

Applicant repeats the offer to surrender the original patent grant when this reissue application is found to be allowable.

Reconsideration of the objection to the reissue Declaration filed with this application is requested. In response to missing parts, an executed Declaration was filed on August 4, 2000 specifying at least one error. In view of this submission, the objection at paragraph 3 is believed to be improper and hence reconsideration thereof is requested. As concerns paragraph 4, it is believed that this is an improper request. The rules for reissue state that only one reason need be presented to file a reissue application and therefore since one reason was presented, the additional requirement to reference the specification and drawings is believed to be improper. Further, at page 3 of the Supplemental Declaration, reference to drawing changes and specification changes were included. Accordingly, the requirement of paragraph 4 is requested to be reconsidered.

Reconsideration of the requirement for a Supplemental Declaration set forth at paragraph 5 is requested. As indicated, supra, the Supplemental Declaration filed with the missing parts is believed to be proper and thus the basis for these newly required Supplemental Declaration is requested to be reconsidered.

Reconsideration of the rejection of claims 69-84 and 98-120 as being an improper recapture of broadened claim subject matter surrendered in the application for the patent upon which the patent reissue is based is requested. Claims 69-110 have been previously cancelled. Claims 111, 112 and 115 have been cancelled herewith. Claim 113 and Claim 96 were indicated as being allowable and include limitations that were not given up during the original prosecution of the application and hence reconsideration of this rejection as concerns those claims, is requested. Note in this regard that claim 113 has been rewritten in independent form and that

claim 96 now appears as original claim 121. Accordingly, reconsideration of this rejection is requested.

Original Patent claims 1, 16, 21 and 29 have been amended to avoid the applied prior art. In particular, these claims have been amended to explain that the first and second aperture means meter the supply of oxidant going to the burner and the means for discharging fuel has been referenced as being supported by the base wall of the oxygen supply housing. These are features now shown in the prior art as will be explained infra.

The Office Action of August 7, 2000 references claims being rejected as being anticipated by the Great Britain Patent (703), but no specific claims were recited. This patent provides for welding of the fuel nozzle to a side of the housing at numeral 1 in Figure 1 and permits for no support of the end of the fuel nozzle by the base plate 15. Thus, the amended claims distinguish over the British patent.

The patent to BOELSMA does not provide for a two stage combustion, in that, at the area were numeral 5 appears, there is no combustion. Further, the reference does not provide any mounting for the free end of the fuel nozzle by the base plate. Additionally, there appears to be no metering at the base plate for the air or oxidant source. Accordingly, the amended claims distinguished over BOELSMA.

The patent to KRIEGER does not have the fuel inlet extend into a precombustion area. The fuel nozzle stops short of the first combustion area 44. Additionally, metering of the oxidant flow through the openings in the base plate is not specifically indicated. For each of these reasons, the amended claims distinguish over KRIEGER.

In JANSSEN, the base plate 11 does not provide for metering. The opening at 11 is equal to or greater than the conduit for the bypass, as is the ~~opening~~ opening 17 leading thereto. There are swirl veins 32, which appear to support the fuel nozzle end located in the first combustion chamber, but these are not a metering orifice. The controls for the amount of oxidant are shown in Figures 2, 3 and 4 and include such things as valve 117 and the additional valves controlling recycling, etc.

The patent to SYSKA shows bypass air passing through a series of apertures in the housing which are unnumbered. The precombustion air at the first combustion chamber 64 proceeds through apertures 34 which are not the same apertures which lead to the bypass. Additionally, the fuel module does not extend through the base plate that has the apertures. Lastly, the fuel nozzle is not supported by the base plate. Accordingly, the amended claims distinguish over SYSKA. The patent to BROWN is but a atomizing nozzle and does not have plural burners. Thus, there is no bypass as referenced.

In view of the above, the claims now up for consideration by Examiner are believed to be clearly patentable over the prior art for the reasons presented above and hence reconsideration of the plurality of rejections is respectfully requested.

It is respectfully requested that, if necessary to effect a timely response, this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response and shortages in other fees, be charged, or any overpayment in fees be credited, to the Account of Barnes & Thornburg, Deposit Account No. 02-1010 (3053/28781).

If upon review, Examiner Price does not agree that the claims as presented are clearly patentable, Examiner Price is requested to contact the undersigned by telephone in attempt to provide a prompt resolution of any outstanding matters.

Respectfully submitted,

BARNES & THORNBURG

A handwritten signature in black ink, appearing to read 'M. Newman', with a long horizontal flourish extending to the right.

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EXHIBIT A

I claim:

Sub D1  
C1

1. A burner assembly for combining oxygen and fuel to produce a flame, the burner assembly comprising a burner block formed to include a flame chamber having an inlet opening and an outlet opening, bypass means for conducting oxygen outside of the flame chamber to the outlet opening of the flame chamber, an oxygen-supply housing including chamber means for receiving a supply of oxygen and a base wall adjacent to the burner block, the base wall being formed to include first aperture means for discharging oxygen from the chamber means into the flame chamber and second aperture means for discharging oxygen from the chamber means into the bypass means, said first and second aperture means metering the supply of oxygen passing there through, and means for discharging fuel into the flame chamber formed in the burner block, the discharging means including a nozzle extending through the chamber means and the first aperture means formed in the base wall and supported by the base wall to discharge fuel into the flame chamber.

C2

13. A burner assembly for combining oxygen and fuel to produce a flame, the burner assembly comprising a burner block formed to include a flame chamber having an inlet opening and an outlet opening, bypass means for conducting oxygen outside of the flame chamber to the outlet opening of the flame chamber, an oxygen-supply housing including chamber means for receiving a supply of oxygen and a base wall adjacent to the burner block, the base wall being formed to include first aperture means for discharging oxygen from the chamber means into the flame chamber and second aperture means for discharging oxygen from the chamber means into the bypass means, wherein the discharging means further includes a removable collar engaging the nozzle and threadedly engaging the oxygen-supply housing, and wherein the oxygen-supply housing includes an annular lip defining a cylindrical nozzle aperture receiving the nozzle and the removable collar includes an annular side wall surrounding and engaging the annular lip.

Sub D3  
C3

16. A burner assembly for combining oxygen and fuel to produce a flame, the burner assembly comprising a burner block formed to include a flame chamber having an inlet opening and an outlet opening, bypass means for conducting oxygen outside of the flame chamber to the outlet opening of the flame chamber, means for discharging fuel into the flame chamber formed in the burner block, [and] an oxygen-supply housing including chamber means for receiving a supply of oxygen and a base wall adjacent to the burner block, the base wall being formed to include first aperture means for discharging oxygen from the chamber means into the flame chamber and second aperture means for discharging oxygen from the chamber means into the bypass means, said first and second aperture means metering the supply of oxygen passing there through, the oxygen- supply housing including a hollow shell appended to the base wall to define the chamber means therebetween, wherein the hollow shell has a pyramidal shape and includes at least one triangular side wall appended to the base wall and formed to include an oxygen-admission port, and wherein the means for discharging fuel extends through the base wall.

Sub D4  
C4

21. A burner assembly for combining oxygen and fuel to produce a flame, the burner assembly comprising a burner block formed to include a flame chamber having an inlet opening and an outlet opening, bypass means for conducting oxygen outside of the flame chamber to the outlet opening of the flame chamber, means for discharging fuel into the flame chamber formed in the burner block, and an oxygen-supply housing including chamber means for receiving a supply of oxygen and a base wall adjacent to the burner block, the base wall being formed to include first aperture means for discharging oxygen from the chamber means into the flame chamber and second aperture means for discharging oxygen from the chamber means into the bypass means, said first and second aperture means metering the supply of oxygen passing there through,

the oxygen-supply housing including a hollow shell appended to the base wall to define the chamber means therebetween, wherein the hollow shell includes a tip and a side wall extending between the tip and the base wall, the tip is formed to include an aperture, and the discharging means includes a nozzle supported by the base wall and extending through the aperture formed in the tip and the first aperture means formed in the base wall and terminating in the inlet opening of the flame chamber.

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29. A burner assembly for combining oxygen and fuel to produce a flame, the burner assembly comprising  
a burner block formed to include a flame chamber having an inlet opening and an outlet opening,  
bypass means for conducting oxygen outside of the flame chamber to the outlet opening of the flame chamber,  
means for discharging fuel into the flame chamber formed in the burner block, and  
an oxygen-supply housing including chamber means for receiving a supply of oxygen and a base wall adjacent to the burner block, the base wall being formed to include first aperture means for discharging oxygen from the chamber means into the flame chamber and second aperture means for discharging oxygen from the chamber means into the bypass means, said first and second aperture means metering the supply of oxygen passing there through, and with the oxygen-  
supply housing further including a hollow shell appended to the base wall to define the chamber means

36. A burner assembly for combining oxygen and fuel to produce a flame, the burner assembly comprising  
a burner block formed to include a flame chamber having an inlet opening and an outlet opening,  
bypass means for conducting oxygen outside of the flame chamber to the outlet opening of the flame chamber,  
means for discharging fuel into the flame chamber formed in the burner block,  
an oxygen-supply housing including chamber means for receiving a supply of oxygen and a base wall adjacent to the burner block, the base wall being formed to include first aperture means for discharging oxygen from the chamber means into the flame chamber and second aperture means for discharging oxygen from the chamber means into the bypass means, said first and second aperture means metering the supply of oxygen passing there through, the burner block

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being formed to include at least one oxygen-admission port lying adjacent to the base wall and communicating with the second aperture means and the bypass means being coupled to the oxygen-admission port and arranged to pass through the burner block to conduct oxygen from the chamber means through the burner block to the outlet opening of the flame chamber, the second aperture means including a plurality of wall apertures formed in the base wall, the burner block being formed to include an oxygen-admission port communicating with each wall aperture, and frame means for supporting the burner block, the base wall being mounted on the frame means, the burner block being formed to include an annular channel around the inlet opening of the flame chamber, the frame means including means for covering the annular channel to define an annular oxygen-conducting passageway therein and means for communicating oxygen discharged from the chamber means through the wall apertures to the annular oxygen-conducting passageway for delivery to the outlet opening of the flame chamber through the bypass means, and  
wherein the means for discharging fuel is supported by the base wall.

37. A burner assembly for combining oxygen and fuel to produce a flame, the burner assembly comprising  
a burner block formed to include a flame chamber having an inlet opening and an outlet opening,  
bypass means for conducting oxygen outside of the flame chamber to the outlet opening of the flame chamber,  
means for discharging fuel into the flame chamber formed in the burner block, and  
an oxygen-supply housing including chamber means for receiving a supply of oxygen and a base wall adjacent to the burner block, the base wall being formed to include first aperture means for discharging oxygen from the chamber means into the flame chamber and second aperture means for discharging oxygen from the chamber means into the bypass means, said first and second aperture means metering the supply of oxygen passing there through, the discharging  
means including a fuel discharge nozzle and means for fixing the fuel discharge nozzle in the inlet opening, the fixing means being positioned to lie between the base wall and the burner block, the fixing means being formed to include third aperture means for conducting oxygen discharged through the first aperture means into the flame chamber, the third aperture means defining a first-stage oxygen port having a first effective cross-sectional area and communicating oxygen from the chamber means into the flame chamber, the second aperture means defining a second-stage oxygen port having a second effective cross-sectional area less than the first effective cross-sectional area and communicating oxygen from the chamber means to the outlet opening of the flame chamber through the bypass means.

113. A burner assembly for combining oxygen and fuel to produce a flame, the burner assembly comprising

a burner block formed to include a flame chamber having an inlet opening and an outlet opening,

an oxygen-supply housing defining an oxygen chamber configured to receive a supply of oxygen and a base wall positioned to lie adjacent to the burner block, the base wall being formed to include an aperture positioned to lie in alignment with the inlet opening and to pass oxygen from the oxygen chamber into the flame chamber,

a fuel-discharge nozzle configured to discharge fuel,

a removable collar engaging the oxygen-supply housing and the fuel-discharge nozzle, the collar being formed to support the fuel-discharge nozzle within the inlet opening of the burner block to discharge fuel into the flame chamber formed in the burner block,

wherein the removable collar engages the fuel-discharge nozzle and threadedly engages the oxygen-supply housing, and

wherein the oxygen-supply housing includes an annular lip defining a cylindrical nozzle aperture receiving the nozzle and the removable collar includes an annular side wall surrounding and engaging the annular lip.

114. The burner assembly of claim 113, wherein the oxygen-supply housing includes a hollow shell that has a tip positioned to lie spaced apart from base wall and the removable collar engages the tip of the hollow shell and the fuel-discharge nozzle to retain the fuel-discharge nozzle in a fixed position within the hollow shell.

116. The burner assembly of claim 113, wherein the fuel-discharge nozzle includes a mounting fixture that selectively engages the collar and the fuel-discharge nozzle is removable from the oxygen-supply housing when the removable collar is disengaged from the mounting fixture.

121. A burner assembly for combining oxygen and fuel to produce a flame, the burner assembly comprising

a burner block formed to include a flame chamber having an inlet opening and an outlet opening,

an oxygen conductor conduit configured to conduct oxygen outside of the flame chamber to the outlet opening of the flame chamber,

an oxygen-supply housing defining an oxygen chamber configured to receive a supply of oxygen and a base wall positioned to lie adjacent to the burner block, the base wall being formed to include a first-stage aperture in alignment with the inlet opening to pass oxygen from the oxygen chamber into the flame chamber and a second-stage aperture arranged to lie in spaced-apart relation to the first-stage aperture to pass oxygen from the oxygen chamber into the oxygen conductor conduit,

a fuel-discharge nozzle extending the oxygen chamber and the first-stage aperture formed in the base wall to discharge fuel into the flame chamber,

further comprising a removable collar engaging the fuel-discharge nozzle and threadedly engaging the oxygen-supply housing, and

wherein the oxygen-supply housing includes an annular lip defining a cylindrical nozzle aperture receiving the fuel-discharge nozzle and the removable collar includes an annular side wall surrounding and engaging the annular lip.

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122. The burner assembly of claim 121, wherein first-stage aperture is formed in the base wall, the second-stage aperture is formed in the base wall and arranged to lie in spaced-apart relation to the first-stage aperture, the oxygen conductor conduit includes at least one oxygen-conducting passageway formed in the burner block and arranged to receive oxygen conducted through a corresponding second-stage aperture, and the internal diameter of each second-stage aperture formed in the base wall is less than the internal diameter of a corresponding oxygen-conducting passageway formed in the burner block to regulate flow of oxygen through the oxygen-conducting passageways formed in the burner block.

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